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Thermal conductive sheet used as heating medium for electronic component, contains thermal conductive filler dispersed in acrylic-type polyurethane binder resin

Patent Assignee: 3M INNOVATIVE PROPERTIES CO (MINN)

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Patent Family (3 patents, 98 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
JP 2002030212	A	20020131	JP 2000201480	A	20000629	200240	B
WO 2003002644	A1	20030109	WO 2002US16743	A	20020524	200305	E
AU 2002312093	A1	20030303	AU 2002312093	A	20020524	200452	E

Priority Applications (no., kind, date): JP 2000201480 A 20000629

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
JP 2002030212	A	JA	8	0	
WO 2003002644	A1	EN			
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW				
Regional Designated States, Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW				
AU 2002312093	A1	EN			Based on OPI patent WO 2003002644

Alerting Abstract JP A

NOVELTY - The thermal conductive sheet comprises thermal conductive filler dispersed in a binder resin. The binder resin is an acrylic-type polyurethane resin.

USE - As heating medium for electronic component such as personal computer.

ADVANTAGE - The conductive sheet has excellent thermal conductivity even in uneven and curved surface. The conductive sheet excels in adhesion property.

Technology Focus

POLYMERS - Preferred Polymer: The acrylic-type polyurethane resin is a polymerization reaction product of acryl oligomer having at least two hydroxyl groups, and a polyfunctional isocyanate. The viscosity of acryl oligomer is 500-10000 cps.

INORGANIC CHEMISTRY - Preferred Filler: The thermal conductive filler is an inorganic filler particle. The mixing ratio of thermal conductive filler with respect to polyurethane resin is 10-70 volume%. The thermal conductive sheet is produced by non-soluble process.

Title Terms /Index Terms/Additional Words: THERMAL; CONDUCTING; SHEET; HEAT; MEDIUM; ELECTRONIC; COMPONENT; CONTAIN; FILL; DISPERSE; ACRYLIC; TYPE; POLYURETHANE; BIND; RESIN

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
C08K-003/00; C08L-075/04			Main		"Version 7"

C08J-005/18; C09J-175/04; C09J-007/00; H01B-001/20			Secondary		"Version 7"
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Japan

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THERMALLY CONDUCTIVE SHEET

Assignee: THREE M INNOVATIVE PROPERTIES CO (MINN)

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Language: JA (8 pages, 0 drawings)

Application: JP 2000201480 A 20000629 (Local application)

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THERMALLY CONDUCTIVE SHEET

FEUILLE THERMOCONDUCTRICE

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(Regional Original) AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

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Original Abstract: A thermally conductive sheet comprising a binder resin and thermally conductive fillers dispersed in said binder resin, characterized in that said binder resin is an acrylic polyurethane resin. The thermally conductive sheet has flexibility and conformability and also has excellent thermal conductivity and well-balanced adhesion performance.